WHAT IS CLAIMED IS:

1. A method for concentrically forming an optical preform using a beam of laser energy, comprising the steps of:

placing a first glass tube around a second glass tube in a concentric configuration, the first glass tube having an inner surface and the second glass tube having an outer surface that is placed proximate to the inner surface; and

directing the beam of laser energy between the inner surface of the first glass tube and the outer surface of the second glass tube to fuse the first glass tube to the second glass tube, thus forming the optical preform.

2. The method of claim 1, wherein the directing step further comprises:

positioning the beam of laser energy in an initial orientation with respect to the first glass tube and the second glass tube; and

applying the beam of laser energy between the inner surface and the outer surface.

3. The method of claim 2, wherein the directing step further comprises moving the first glass tube and the second glass tube relative to the beam of laser energy.

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4. The method of claim 3, wherein the moving step further comprises rotating the first glass tube and the second glass tube relative to the beam of laser energy causing the beam of laser energy to selectively heat the inner surface and the outer surface as the beam of laser energy reflects between the inner surface and the outer surface.

5. The method of claim 4, wherein the moving step further comprises rotating the first glass tube and the second glass tube about a longitudinal axis of the first glass tube while concurrently reflecting the beam of laser energy between the inner surface and the outer surface causing the inner surface and the outer surface to fusion weld together.

6. The method of claim 1, wherein second glass tube has a coating layer disposed on the outer surface; and

wherein the directing step further comprises

applying the beam of laser energy to the coating layer,

selectively heating the coating layer using the beam of laser energy causing diffusion of the coating layer into at least the second glass tube, and

fusion welding the first glass tube and the second glass tube together using the beam of laser energy to form the optical preform.

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7. A method for concentrically forming an optical preform using a beam of laser energy, comprising the steps of:

assembling at least one hollow glass tube concentrically around a solid glass rod, the hollow glass tube having an inside diameter (ID) surface and the solid glass rod having an outer surface, the ID surface and the outer surface defining a cylindrical gap between the hollow glass tube and the solid glass rod;

positioning the beam of laser energy in an initial configuration with respect to the concentrically assembled tube and rod;

generating a beam of laser energy within a laser energy source;

applying the beam of laser energy to a starting point within the cylindrical gap; and

moving the beam of laser energy relative to the starting point as the applied beam is used to join the ID surface to the outer surface to form the optical preform.

8. The method of claim 7, wherein the initial configuration prescribes an incident beam angle for the beam of laser energy.

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9. The method of claim 8, wherein the moving step further comprises rotating the concentrically assembled tube and rod around the solid glass rod causing the beam of laser energy to selectively heat the ID surface and the outer surface.

10. The method of claim 9, wherein the rotating step further comprises rotating the concentrically assembled tube and rod about a longitudinal axis of the solid glass rod while concurrently applying the beam of laser energy to each of the ID surface and the outer surface causing the inner surface and the outer surface to fusion weld together.

11. The method of claim 7, wherein the solid glass rod has a coating layer disposed on the outer surface and wherein the applying step further comprises applying the beam of laser energy to the coating layer at the starting point; and

wherein the moving step further comprises moving the beam of laser energy relative to the starting point as the applied beam causes thermal diffusion of the coating layer into at least the solid glass rod.

12. The method of claim 11 further comprising fusion welding the hollow glass tube and the solid glass rod together using the beam of laser energy to form the optical preform.

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13. An apparatus for concentrically forming an optical preform using a beam of laser energy, comprising:

a processor;

a communications interface coupled to the processor;

a laser energy source in communication with the processor via the communications interface, the laser energy source being capable of selectively providing a beam of laser energy in response to a first signal from the processor;

a movable support member in communication with the processor via the communications interface, the movable support member for supporting a hollow glass tube concentrically assembled around a solid glass rod having a longitudinal axis, the hollow glass tube having an inside diameter (ID) surface, the solid glass rod having an outer surface that is proximate to the ID surface of the hollow glass tube, the ID surface and the outer surface defining a cylindrical gap between the hollow glass tube and the solid glass rod, the movable support member being capable of moving the tube and rod relative to the beam of laser energy in response to a second signal from the processor; and

a reflective conduit in communication with the processor via the communications interface, the reflective conduit being configured to receive the beam of laser energy from the laser energy source and to adjustably provide the beam of laser energy down into the cylindrical gap in response to a third signal from the processor, thereby causing the hollow glass tube and the solid glass rod to be fusion welded together to form the optical preform.

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14. The apparatus of claim 13, wherein the reflective conduit is further operative to provide the beam of laser energy at a predetermined incident beam angle into the cylindrical gap in response to the third signal from the processor.

15. The apparatus of claim 13, wherein the movable support member further comprises at least one actuator for moving the movable support member as the beam of laser energy is applied to the cylindrical gap.

16. The apparatus of claim 15, wherein the at least one actuator causes a rotational shift between the beam of laser energy and the movable support member.

17. The apparatus of claim 16, wherein the movable support member is a lathe device having an adjustable chuck for supporting the concentrically assembled tube and rod.

18. The apparatus of claim 15, wherein the at least one actuator rotates the hollow glass tube and the solid glass rod about the longitudinal axis as the beam of laser energy is concurrently applied to the cylindrical gap in response to the second signal from the processor.

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19. The apparatus of claim 13, wherein the reflective conduit is further configured to apply the laser beam to a coating disposed between the tube and rod as the processor causes the movable support member to rotate the tube and rod together around the longitudinal axis of the rod, thereby causing the tube, the coating and the rod to be joined together to form the optical preform.

20. A method for concentrically forming an optical preform using a beam of laser energy, comprising:

applying the beam of laser energy to a coating layer disposed between an inner surface of a first glass tube and an outer surface of a second glass tube, the first glass tube being concentrically assembled around the second glass tube; and

selectively heating the coating layer using the beam of laser energy causing diffusion of the coating layer to create the optical preform.

21. The method of claim 20, wherein the selective heating step further comprises welding the coating layer, the inner surface of the first glass tube and the outer surface of the second glass tube together to form the optical preform.

22. The method of claim 20, further comprising depositing the coating layer

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between the inner surface and the outer surface by selectively heating a reactant gas disposed between the inner surface and the outer surface.

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